



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/654,997	09/05/2003	Kazuto Ikemoto	396.43046X00	6686

20457 7590 02/14/2005

ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-9889

EXAMINER

DELCOTTO, GREGORY R

ART UNIT PAPER NUMBER

1751

DATE MAILED: 02/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/654,997

Applicant(s)

IKEMOTO, KAZUTO

Examiner

Gregory R. Del Cotto

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-12 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

1. Claims 1-12 are pending.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-11, drawn to a cleaning composition, classified in class 510, subclass 175.
- II. Claim 12, drawn to a method for cleaning a substrate of semiconductor integrated circuits, classified in class 134, subclass 1.2.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group I and Group II are related as product and process of use.

The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the composition of Group I can be used in a materially different process such as in a method for cleaning dishes.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

Art Unit: 1751

During a telephone conversation with Alan E. Schiavelli on January 28, 2005, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-11. Affirmation of this election must be made by applicant in replying to this Office action. Claim 12 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the specific compound "N-hydroxyformamide", does not reasonably provide enablement for "a N-hydroxyformamide" compound as recited by the instant claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims. Note that, "a N-hydroxyformamide" as recited by instant claim 1 would encompass any compound having a hydroxyformamide group and is not limited to the specific compound "N-hydroxyformamide" which disclosed in the specification.

Claim Rejections - 35 USC § 102

Art Unit: 1751

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Carter et al (US 2004/0152309).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Carter et al teach a method of polishing a silicon-containing dielectric layer involving the use of a chemical-mechanical polishing system comprising an inorganic abrasive, a polishing additive, and a liquid carrier, wherein the polishing composition has a pH of about 4 to about 6. The polishing additive comprising a functional group having a pKa of about 4 to about 9 and is selected from the group consisting of arylamines, aminoalcohols, aliphatic amines, heterocyclic amines, hydroxamic acids, aminocarboxylic acids, etc. See Abstract. Suitable aminoalcohols include triethanolamine, hydroxylamine, etc. See para. 21. The hydroxamic acid can be formohydroxamic acid (N-hydroxyformamide), acetohydroxamic acid, etc. See para. 24. The polishing composition further comprises an alcohol such as methanol, ethanol, or propanol. See para. 36. Ph adjusters may also be used in the compositions and

Art Unit: 1751

include sodium hydroxide, potassium hydroxide, etc. See para. 34. The liquid carrier is typically water. See para. 33. Note that, with respect to instant claim 1, it simply requires a N-hydroxyformamide and is a one component system; the Examiner asserts that the teaching and existence of formohydroxamic acid (N-hydroxyformamide) by Carter et al is sufficient to anticipate claim 1.

Accordingly, the teachings of Carter et al anticipate the material limitations of the instant claims.

Claims 2-6, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al (US 2004/0152309).

Carter et al are relied upon as set forth above. However, Carter et al do not teach, with sufficient specificity, a cleaning composition containing a N-hydroxyformamide, an alkaline compound, solvent, water, and the other requisite components of the composition in the specific proportions as recited by the instant claims.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to formulate a cleaning composition containing a N-hydroxyformamide, an alkaline compound, solvent, water, and the other requisite components of the composition in the specific proportions as recited by the instant claims, with a reasonable expectation of success and similar results with respect to other disclosed components, because the broad teaching of Carter et al suggest a cleaning composition containing a N-hydroxyformamide, an alkaline compound, solvent,

water, and the other requisite components of the composition in the specific proportions as recited by the instant claims.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Castelhana et al (US 6,037,472).

Castelhana et al teach compounds and their pharmaceutically acceptable salts which inhibit matrix metalloproteases. Castelhana et al teach that suitable compounds include those which are substituted with N-hydroxyformamide. See column 2, lines 34-65. Note that, with respect to instant claim 1, it simply requires a N-hydroxyformamide and is a one component system; the Examiner asserts that the teaching and existence of a N-hydroxyformamide substituted compound by Castelhana et al is sufficient to anticipate claim 1.

Accordingly, the teachings of Castelhana et al anticipate the material limitations of the instant claims.

Claims 1 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/23667.

'667 teaches an aqueous stream fraction which contains formohydroxamic acid and is held in a vessel to allow complete hydrolysis of the formohydroxamic acid. See claim 19.

Note that, with respect to instant claim 1, it simply requires a N-hydroxyformamide and is a one component system; the Examiner asserts that the teaching and existence of formohydroxamic acid (N-hydroxyformamide) by '667 is sufficient to anticipate claim 1.

Accordingly, the teachings of '667 anticipate the material limitations of the instant claims.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carter et al (US 2004/0152309) as applied to claims 1-6, 10, and 11 above, and further in view of miller et al (US 2002/0177316).

Carter et al are relied upon as set forth above. However, Carter et al do not teach the use of a corrosion inhibitor in addition to the other requisite components of the composition as recited by the instant claims.

Miller et al teach a copper polish slurry, useful in the manufacture of integrated circuits in generally, and for chemical-mechanical polishing of copper and copper diffusion barriers particularly, may be formed by combining a chelating, organic acid buffer system such as citric acid and potassium citrate; and an abrasive, such as colloidal silica. See Abstract. Alternatively, copper polish slurries, in accordance with the present invention, may be formed by further combining an oxidizer, such as hydrogen peroxide, and/or a corrosion inhibitor such as benzotriazole. See Abstract.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use a corrosion inhibitor such as benzotriazole, in the chemical-mechanical polishing slurry as taught by Carter et al, with a reasonable expectation of success, because Miller et al teach the use of a corrosion inhibitor such as benzotriazole in a similar CMP composition and, further, corrosion inhibitors are desirable and notoriously well-known additives included in compositions which contact metal substrates.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Remaining references cited but not relied upon are considered to be cumulative to or less pertinent than those relied upon or discussed above.

Applicant is reminded that any evidence to be presented in accordance with 37 CFR 1.131 or 1.132 should be submitted before final rejection in order to be considered timely.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory R. Del Cotto whose telephone number is (571) 272-1312. The examiner can normally be reached on Mon. thru Fri. from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Application/Control Number: 10/654,997
Art Unit: 1751

Page 10

A handwritten signature in black ink, appearing to read 'Gregory R. Del Cotto', written over a horizontal line.

Gregory R. Del Cotto
Primary Examiner
Art Unit 1751

GRD
January 31, 2005